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the folly of regarding them as curiosities it will subserve a good purpose. The likelihood is that it will do more, that it will introduce into the stereotyped customs and formulæ of the West a spirit that is not essentially alien to our own art, but that may be incorporated to advantage, especially on purely decorative lines.

WALTER T. HADLEY.

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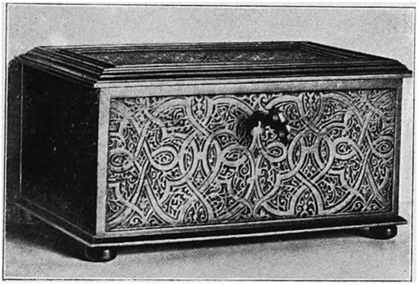

CAST-IRON CHEST

AMERICAN ART INDUSTRIES—I

ORNAMENTAL IRON-WORK*

The development of America has been so rapid, so marvelous, so unlike that which has characterized the old-world countries, that in a survey of mere material progress—the reclamation of the wilderness, the extension of commerce, the multiplication of manufacturing interests—one is apt to forget that development in the finer lines of artistic production has been no less marked. No country in the world, however, is to-day doing better work of an artistic character, and none has the augur of a brighter future.

The so-called fine arts have evolved into art industries; the studios of a decade or two ago have become extensive manufacturing concerns; and the select coterie who formerly preëmpted the term "artist" as their special privilege have had their places usurped by a humbler but no less talented corps of workers who toil in factory and smithy, without the meed of praise, artisans in name, but artists in skill and temperament.

In all these sweeping changes it is the gifted few who have given direction to the multitude. The most radical innovations of one day have been the commonplaces of the morrow, and work worthy of museums, work that would be warrant for brochures and monographs were it not of daily occurrence, has been passed by with possibly a word of admiration, but scarce a word of query or wonder. Thousands who to-day take the liveliest interest in salons and exhibitions, and who can name the year's medalists in prize competitions, barely give a thought to the unmedaled workers in allied lines. The art blacksmith is forgotten with the rest.

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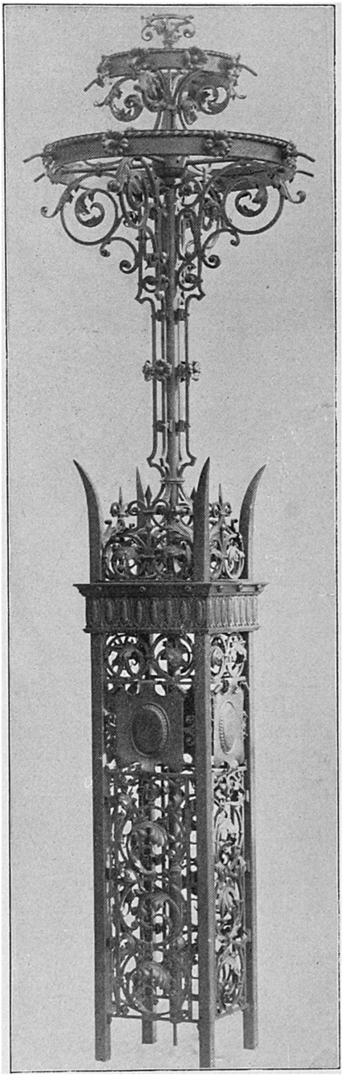
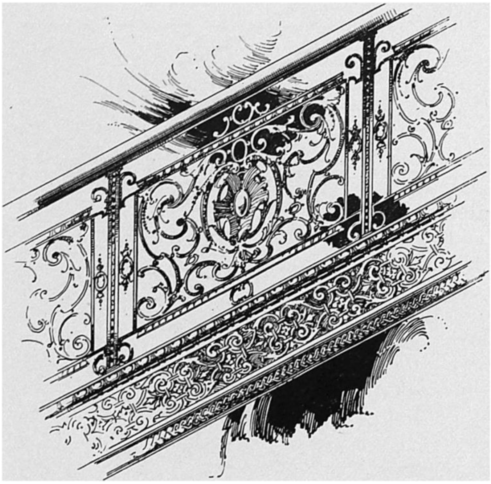
* BRUSH AND PENCIL is indebted to The Winslow Brothers Company, Chicago, for the illustrations in this article.

The art blacksmith, however, has done work, different in kind it is true, but comparable in quality with that of the idols of schools and salons. We see it in the fireplace, the grille, the store-front, the electrolier, the gate and railing, the elevator inclosure—in a thousand and one places which are rapidly being transformed from the bald necessities of utility into places of adornment. Even within the last decade the remarkable development of improved and novel means of construction and the still more remarkable evolution of thought and sentiment as regards the purely ornate features of architectural design have broadened the architect's opportunities, and have opened up virtually a new field in which to exercise his talent and exploit his genius.

In a word, art in iron, which reached its highest development in the last half of the seventeenth century, has literally been given a new birth. Iron has been exalted to an eminence it never before enjoyed. Old methods have been modified to meet new conditions;



ELECTROLIER AND NEWEL
Wrought Iron

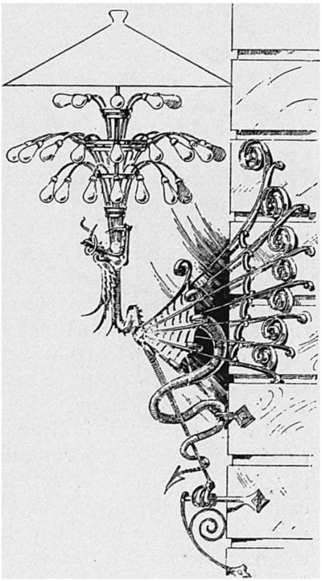


STAIRCASE—ITALIAN RENAISSANCE
Cast Iron

improvement has rapidly followed improvement; and to-day much of the work that is being done by the master art blacksmiths of America rivals in beauty and finish the best productions of the old masters of Germany, France, and Italy.

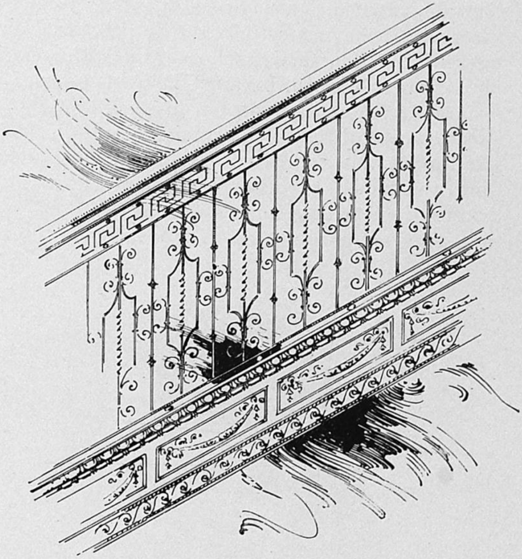
As might naturally be expected, ornamental iron-work was slow to gain a footing in the new world. A quarter of a century ago, even, it was literally an unknown art in this country. First a forge designed for something more than mere utility was started here and there, and within a couple of decades the little shops whose proprietors sought to rival the art of the old masters have grown into vast establishments, where thousands of skilled artisans find employment.

The revival of the old art was welcomed by the American architect, who clearly saw the possibilities it presented and was quick to avail himself of a means of enriching his designs and perpetuating his ideas in enduring form. This, of course, gave a stimulus to the American art metal-worker, who rapidly developed all his latent talent, and who is to-day the peer of the best exemplars of the art in countries which boast of centuries of example and precedent. It is within the limit of truth to say that more and finer art metal-work is used in the great cities of the Union at the present time than in any other country.

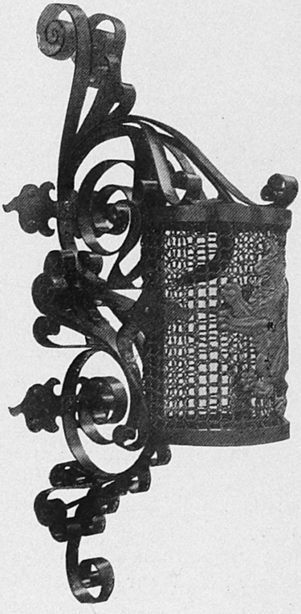


BRACKET AND ELECTROLIER
Wrought Iron, Oxidized

All ornamental iron-work emanates primarily from the designing-room and passes through regular stages of development. It is interesting to trace the processes from the reception of the pig metal to the completion of an oxidized rose or ivy wreath, or of a galvano-plastic bas-relief, especially in view of the fact that science and invention have materially altered the methods of antiquity. Results as fine as were ever attained by the Greeks in repoussé or by their sturdier and more practical successors in the art in Germany are now largely effected by simpler and more expeditious processes. The new birth of ornamental iron-work in America had of necessity to conform to present-day conditions, and naturally became affected by present-day achievements in other lines.



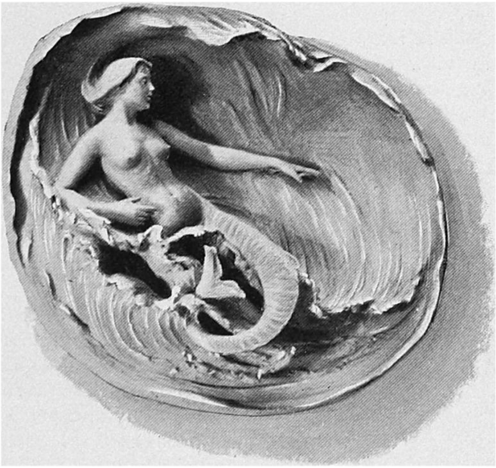
STAIRCASE—OLD COLONIAL
Cast Iron



WALL LANTERN
Wrought Iron, Oxidized

Art metal-work as actually practiced to-day falls into three distinct classes, cast-iron work, wrought-iron work, and that accomplished by galvanic action. Whatever form the art assumes, however, it presupposes the most carefully prepared designs, and in every establishment in which this class of work is done one finds a corps of artists carefully trained, not merely in the production of beautiful designs, but also in meeting the exigencies of the various processes to which those designs must ultimately be subjected. Whatever of charm the finished work is to have must clearly be perceived and indicated in the initial drawings. The artist who outlines the work must not be merely a good draughtsman, he must also in a sense be a sculptor. A good share of the ornamental iron-work done presupposes the effect of sculpture, and the initial tracings, though primarily designed to please and meet the approval of patrons, must also pass in modified form into the hands of other workmen whose duty it is to embody the sketch in a lasting form.

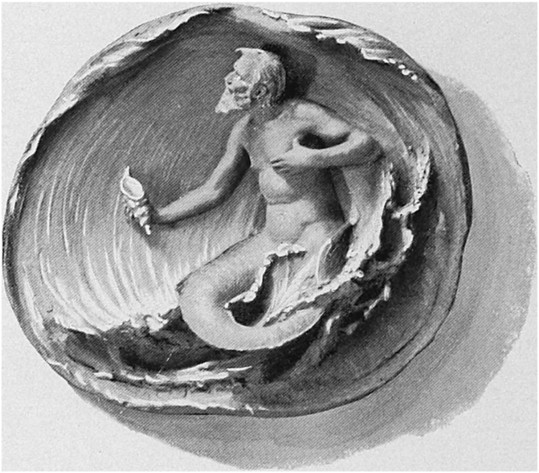
The approved sketch goes from the designing-room to the draughting-room, where its lines are enlarged and its details more fully filled in. The importance of this will readily be seen when one remembers that most ornamental iron-work is designed to fit a special place and subserve a given purpose. Consequently, the diminutive outlines of the designer have to be redrawn on the exact scale of the place into which the finished work is to fit. Iron is an uncompromising metal, and the fault of a fraction of an inch may cause days of trouble, and possibly ruin the completed work.



THE MERMAID
Galvano-Plastic Work

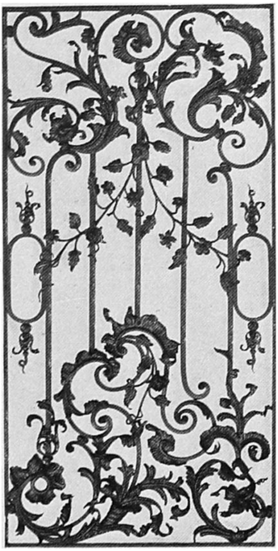
With reference to cast work, the working plans then go to the pattern-room, where models of wood are chiseled and carved into a tangible similitude of the designer's enlarged sketch. This wooden model serves mainly as a body on which to superimpose in all its detail the ornate or delicate tracery of which the designer has only given a hint in his preliminary sketch. The detail work—leaves, flowers, curves, geometrical figures, and the like—is executed in plaster by skilled workmen, and from these plaster molds duplicates in a composition of glue and wax are made These adhere firmly to the wooden body of the model, and while plastic enough to receive the finishing touches, have yet sufficient rigidity to be servicable as a pattern.

The rest of the process, so far as the cast product is concerned, is the familiar work of the foundryman, save that greater care and nicer precision are required in proportion as a higher class of result is desired. There is the same making of molds and pouring of metal; the same scraping away of sand from the cooled casting; the same remedying of superficial defects by file and emery wheel; and finally the same fitting together, as in the coarser class of work. From the pattern-room to the finishing-room there is essentially no difference between the manufacture of an iron girder to be cased with fire brick and a column-casing rich with the ornamentation of a cultured taste.



THE MERMAN
Galvano-Plastic Work

Ornamental cast-iron work is essentially modern, and in one sense is the least interesting phase of the art. It is likewise the most common. It has possibilities, however, that are rapidly being devel-

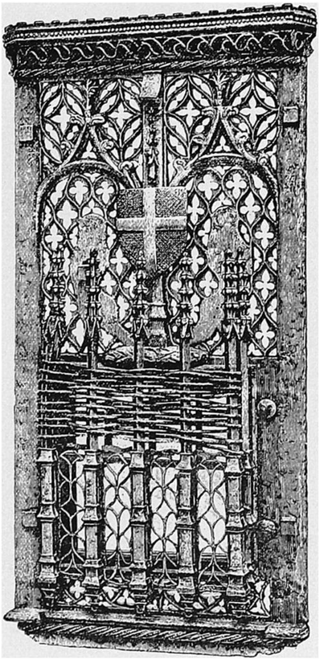


GRILLE—RECENT DESIGN
Wrought Iron

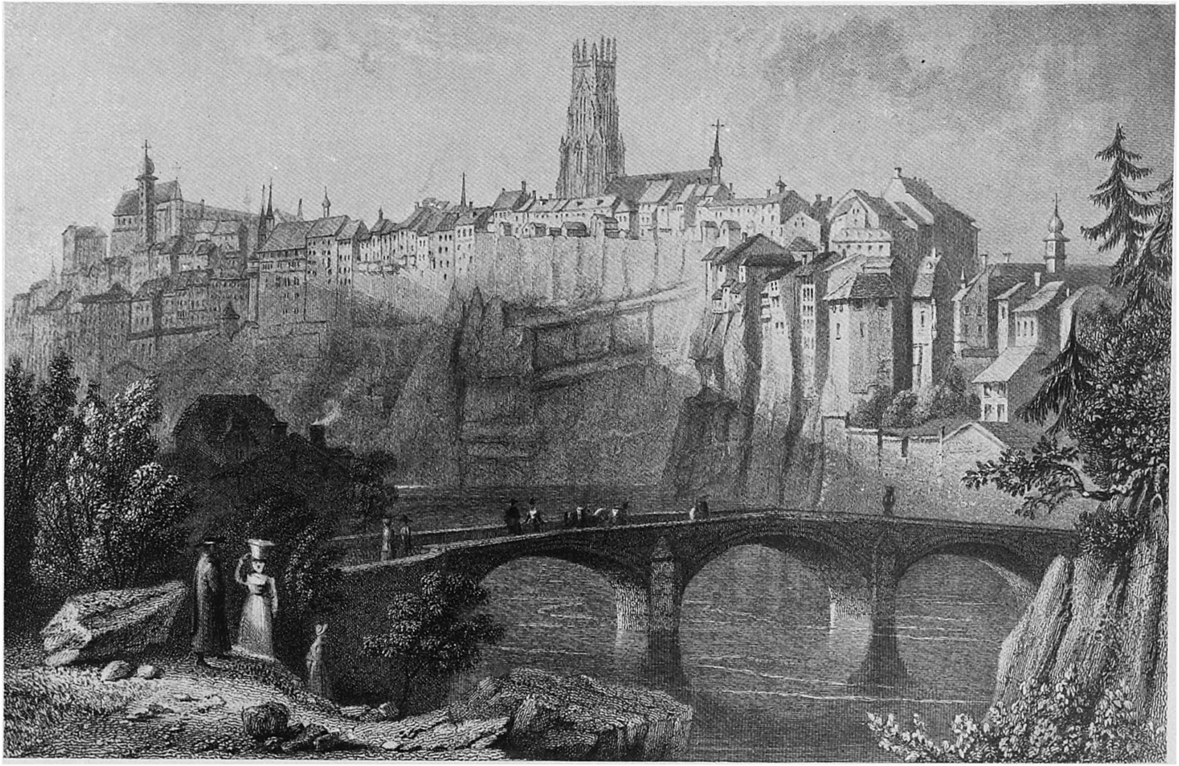
oped, and as a feature in present-day architecture is supplanting much of the ornamentation formerly in vogue. The simplicity of the process does not militate against its artistic effect. Weeks are often spent in modeling a single design, and the finished product, oxidized to prevent rust, or subjected to a bath and plated by electricity with bronze, brass, or nickel, rivals in beauty and durability the choicest masterpieces of art that find lodgment in galleries and museums.

Ornamental wrought iron, especially hammered leaf-work, which we have inherited from the German smith of the Gothic period with comparatively few changes, is an entirely different branch of the art, and one which marks the highest attainment of the artist blacksmith. The man with the hammer must in every sense be an artist or the product of his forge will be a crude makeshift, an apology for an artistic creation. In fashioning from unyielding metal the delicate petals of a flower or the leaves of a vine, something of necessity must be sacrificed; but what of artistic feeling may thus be sacrificed in the attempt to copy literally nature's handiwork is, as has been well contended, compensated for by the admiration accorded to the workmanship.

An expert in this class of work has said: "The flower and the vine in iron possess a merit peculiar to themselves, which the tenets of high art do not touch. To fashion a rose in



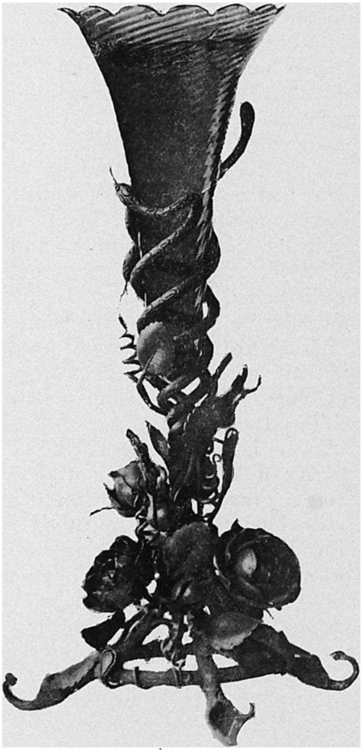
FLEMISH VIZZING



FREIBURG, SWITZERLAND
Engraved by J. B. Allen, after W. H. Bartlett

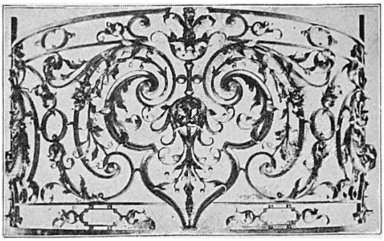
THE PICTURESQUE IN ART
Plate One

iron requires even more than the combined skill of carver and limner, in that each leaf must stand upon its own merit. The smith can neither cover its defects nor heighten its beauty by a trick of the brush or submerge the blossom in an idealized background, any more than he can impart fragrance to it. Its perfection in all save color is at once its sole excuse for being and its charm."


WROUGHT-IRON VASE
Hammered Leaf Work

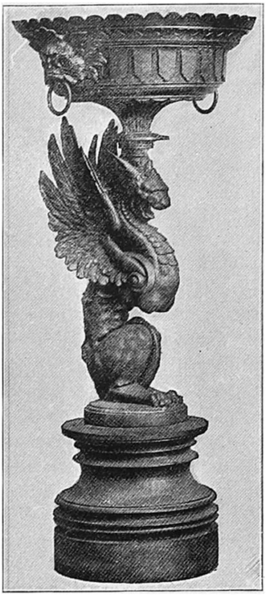
Ornamental iron-work of this peculiar kind is the luxury of the rich, and one can readily understand its hitherto limited vogue. Scroll-work in the form of the grille, which has been subjected to countless mutations and has evolved from a simple barred window to the most delicate and fanciful designs, has long been popular, but flower and wreath work in America is probably less than a decade old. Of late years, however, examples of the work have been produced as unsurpassed in delicacy and beauty as those that gave the smiths of mediæval Germany the rank of masters of the art.

The artist blacksmith in wrought work does not produce his desired effects in wax or pliant composition and trust to a model thus easily made to yield him a finished product beautiful and perfect in detail. It is a matter of forge and hammer. The class of work precludes other treatment. He takes a piece of intractable metal, heats it, hammers it, bends it into the proper shape, smooths or dents its edges as required, works in midrib and veins with the accuracy of nature, and that not with

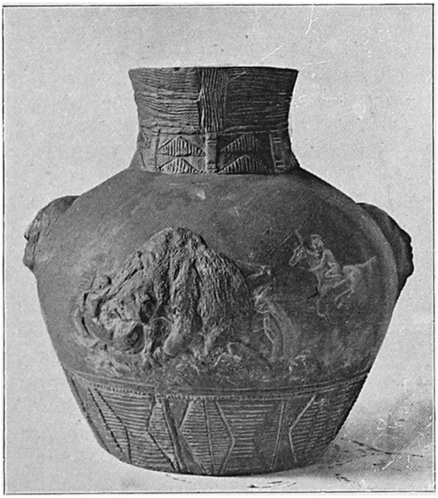

MODERN GERMAN GRILLE

thin sheet iron, such as is worked into bric-à-brac, but with Scandinavian iron or open-hearth steel of sound substance, delicate of texture, and fragile in appearance only.

He may have a real flower or the photograph of a real flower only as his model. Each leaf is an individual work. The flower is built up leaf upon leaf, each requiring separate treatment and dexterous welding. The putting together of the detached pieces requires the same manipulative skill and the same degree of artistic grouping as would be bestowed upon the whole or any part of an important composition. The mere work of welding together the separate petals of a flower into a perfect whole, or the welding of leaves upon a stem bent with natural grace, is no mean trick, and places the artist blacksmith on a higher plane than any other class of metalworker. The smithy becomes a studio.

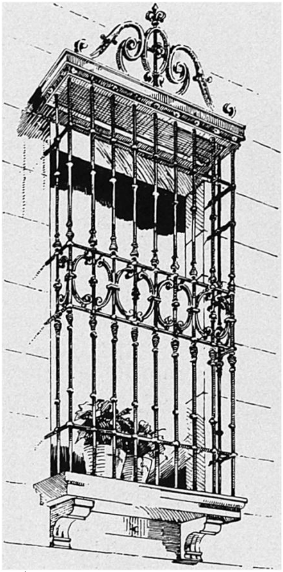


GARDEN VASE
Cast Iron, Oxidized



INDIAN JAR
Galvano-Plastic Work

In the cheaper qualities of flower and wreath work, short cuts to fairly satisfactory results are in these days often taken, and it is a curious fact that the country that invented and perfected the art of making iron foliage by hand has also invented its machine-made substitute. To-day Germany exports tons of stamped leaves and petals practically ready for welding and requiring only a few dents and curves by the artist blacksmith. These, how-

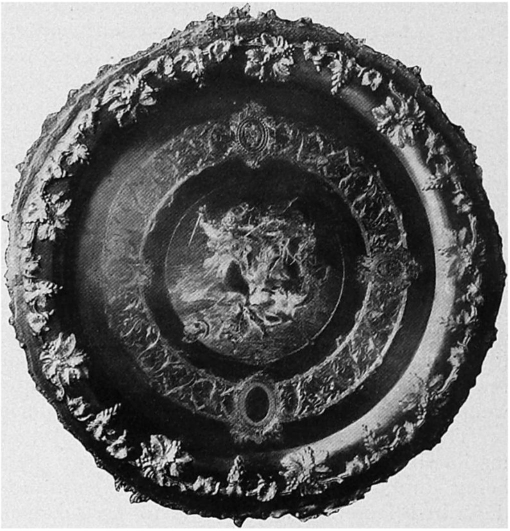


WINDOW GUARD—SPANISH RENAISSANCE
Wrought Iron

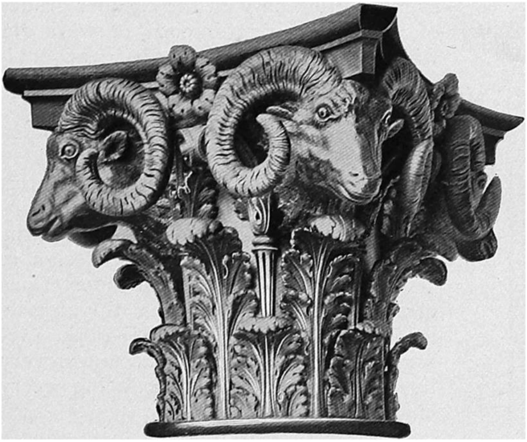
ever, are used only on the cheaper grades of work. The better class of work for which America is fast acquiring an enviable reputation admits only the genuine forged article.

The third form of the ornamental work of to-day, the galvano-plastic, is largely effected by a silent artist whose methods are screened from observation. The sentient artist may work weeks or months in perfecting a masterpiece of design in clay, and in a few days the mysterious electric current transforms the fragile model into enduring metal-work, preserving with incomparable accuracy every line and curve and reproducing every charm and grace.

It is no part of this article to give a history of the various steps by which the disintegrating action of the galvanic current, discovered by Sir Humphry Davy in 1808, became in the course of years a factor in architectural ornament. It is only necessary to say that the main difference between electro-plating and the galvano-plastic process is that the former requires a substantial base, which remains as an integral part, while the latter is complete in itself, the deposited metal being of sufficient body to render any other base



SHIELD
Galvano-Plastic Work



CAPITAL, AT PARIS EXPOSITION
By The Winslow Brothers Company

unnecessary. The bas-relief ornamentation one to-day sees in frieze and panels is thus essentially a latter-day achievement of the metallurgist.

The process is as simple as it is effective. From the studio of the sculptor the model is transferred to the galvano-room, where a mold is made of a special composition directly from the clay. Intermediate plaster casts are dispensed with. The crisp, sketchy effects possible in the clay are thus preserved unimpaired, and the technique of the sculptor in every line is left inviolate. Be the model what it may, every excellence or fault is faithfully reproduced, and no alien hand can remove a blemish or enhance a beauty.

The model to be reproduced is enveloped in a matrix; its grace and dignity are lost to view; the clay shrinks and cracks and crumbles to rubbish, but the matrix has caught its beauties. It is then metalized or prepared for the bath, and after submersion in the tank the electric current silently does the rest. Day after day the metal in solution is deposited on the lines of beauty tooled out by the sculptor with a precision that no human copyist could approximate. Provided only that proper care is taken in the adjustment of the apparatus, the mysterious agent does its work with absolute fidelity.

In proper time the metal shell is inspected and cleansed, and is once again submerged in a different solution to give the desired finish to the work. The process is now completed, and the frail model of a few days before, which would soon have fallen to pieces of its own weight, is transformed into a permanent thing of beauty.

This, in brief, is the story of the art blacksmith of to-day and his modified methods. The best products of the ages in metal-work are being duplicated or rivaled, and in all three of the processes above described America is probably to-day producing ampler and better results than any nation which has undertaken to clothe the metal-work of mere utility with beauty. HUGH W. COLEMAN.